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INVESTIGATIONS OF MEDIUM WAVELENGTH MAGNETIC
ANOMALIES IN THE EASTERN PACIFIC USING MAGSAT
DATA

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QUARTERLY REPORT

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The main body of research this quarter has been directed at the understanding of the long wavelength (~ 3000 km) anomalies appearing in the MAGSAT anomaly map. The existence of these anomalies resulted in controversy during the IAGA meeting during the summer. We cannot believe that these anomalies can be attributed to crustal sources but rather core sources that spherical harmonic models have failed to remove from the data. If true, this supposition has grave consequences for anybody attempting crustal magnetization modeling in large areas. Spectra of MAGSAT profiles of anomalous field tend to support the view that the spherical harmonic model is not performing as expected. As a result we are studying the details of spherical harmonic representations of the Earth's magnetic field.

During this quarter we also received the first of the INVESTIGATOR 'B' QUIET TIME tapes covering the time span NOVEMBER 1979 - FEBRUARY 1980. The data set seems to be error free. We have noted the change to an updated spherical harmonic model presumably corrected for the seasonal ionospheric currents which contaminated the previous model.

Due to the attendance of the P.I. at the IAGA meeting and because of discussions concerning the wavelength of crustal and core anomalies, a paper is being prepared for the special issue of GRL on MAGSAT investigations, in which this question will be discussed.